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ABSTRACT

This study investigated the relationship between academic procrastination and library anxiety at the graduate level. Participants were 135 graduate students enrolled in 3 sections of a required introductory-level educational research course at a Southeastern university. Participants were administered the Library Anxiety Scale (LAS) and the Procrastination Assessment Scale-Students (PASS). Findings revealed that overall academic procrastination was significantly related to the following dimensions of library anxiety: affective barriers, comfort with the library, and mechanical barriers. A canonical correlation analysis revealed that academic procrastination resulting from both fear of failure and task aversiveness was related significantly to barriers with staff, affective barriers, comfort with the library, and knowledge of the library. Implications for library anxiety reduction as a procrastination intervention are discussed. (Contains 44 references.) (MES)

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Running head: PROCRASTINATION AND LIBRARY ANXIETY

I'll Go to the Library Tomorrow: The Role of Procrastination in Library Anxiety

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Abstract

Academic procrastination is prevalent among college students. Indeed, approximately 95% of students procrastinate in academic tasks such as writing a term paper, studying for examinations, and keeping up with weekly reading assignments. Apparently, this academic procrastination stems primarily from fear of failure and task aversiveness. At the graduate level, it has been estimated that as many as 60% of students procrastinate on academic tasks, with more than two-thirds reporting that they would like to decrease their tendency to procrastinate. In a recent study, it was theorized that high-anxious graduate students procrastinate typically procrastinate while engaging on library tasks. However, this theory has not been empirically tested. Thus, this study investigated the relationship between academic procrastination and library anxiety at the graduate level. Participants were 133 graduate students enrolled in three sections of a required introductory-level educational research course at a southeastern university. Findings revealed that overall academic procrastination was significantly positively related to the following dimensions of library anxiety: affective barriers, comfort with the library, and mechanical barriers. A canonical correlation analysis revealed that academic procrastination resulting from both fear of failure and task aversiveness were related significantly to barriers with staff, affective barriers, comfort with the library, and knowledge of the library. Implications for library anxiety reduction as a procrastination intervention are discussed.

I'll Go to the Library Tomorrow: The Role of Procrastination in Library Anxiety

Procrastination is the act of needlessly postponing or delaying undertaking a task. As noted by Milgram, Batori, & Mowrer (1993), procrastination may take a variety of forms, including the following: (1) *decisional* procrastination, which is defined as the inability to make timely decisions (Effert & Ferrari, 1989); (2) *neurotic* procrastination, which is defined as the tendency to postpone major life decisions (Ellis & Knaus, 1979); (3) *compulsive* behavior, which is defined as decisional and behavioral procrastination in the same person (Ferrari, 1991a); (4) *life routine* procrastination, which refers to experienced difficulties in completing recurring chores and routines on schedule (Milgram, Sroloff, & Rosenbaum, 1988); and (5) *academic* procrastination, which is defined as the purposive and needless delay in beginning or completing academic tasks (Rothblum, Solomon, & Murakami, 1986).

Of the five types of procrastination mentioned above, academic procrastination is that which most affects college students. In fact, it has been estimated that as many as 95% of students procrastinate in academic tasks to the point of experiencing anxiety (Ellis & Knaus, 1979). Tasks which induce procrastination include writing term papers, studying for examinations, and keeping up with weekly reading assignments (Solomon & Rothblum, 1984). Interestingly, procrastination has been found to be prevalent among both undergraduate (e.g., Solomon & Rothblum, 1984) and graduate (Onwuegbuzie, 1999) students. With respect to the former, Solomon and Rothblum (1984) found that between 27% and 46% of undergraduate students reported that they nearly always or always procrastinated on writing term papers, studying for examinations, and keeping up with weekly readings. Also, these authors discovered that nearly one-

quarter of these students reported that procrastination was nearly always or always a problem for them when undertaking these tasks. Interestingly, in this study, between 55% and 65% of students reported that they wanted to decrease their tendency to procrastinate on these tasks. Similarly, Clark and Hill (1994) found that between 30 and 45% of African-American undergraduate students in their sample reported problems with procrastination on writing a term paper, studying for examinations, and keeping up with weekly reading assignments. Additionally, between 55 and 60% of the students wanted to decrease their procrastination on these tasks.

Using factor analysis, Solomon and Rothblum (1984) found that fear of failure and task aversiveness are the primary reasons for procrastinating, with the former explaining 49% of the variance in why undergraduate students procrastinate, and the latter accounting for 18% of the variance. The fear of failure factor includes items which relate to evaluation anxiety and overly perfectionistic standards for one's performance, and low self-confidence. In contrast, the task aversiveness factor comprises items which reflect a dislike of engaging in academic activities and a lack of energy. These authors reported that the percentage of college students who endorsed items representing the fear of failure factor ranged from 6.3% to 14.1%, whereas the endorsement of the task aversiveness factor ranged from 19.4% to 47.0%. These findings led them to conclude that there are two groups of procrastinators at the undergraduate level: (1) a relatively small but extremely homogenous group of students who report procrastinating as a result of fear of failure; and (2) a relatively heterogeneous group of students who report procrastinating as a result of aversiveness of the task.

Recently, at the graduate level, Onwuegbuzie (1999) found that 41.7% of the graduate students reported that they nearly always or always procrastinate on writing a term paper, 39.3% procrastinate on studying for examinations, and 60.0% procrastinate on keeping up with weekly reading assignments. In addition, between 21% and 42% reported that procrastination was nearly always or always a problem when undertaking these tasks, and between 65% and 72% wanted to decrease their tendency to procrastinate.

Surprisingly, graduate students may have an even greater tendency to procrastinate on academic tasks than do undergraduate students. Indeed, Onwuegbuzie (1999) found that graduate students in his study were nearly 3.5 times more likely to report that they nearly always or always procrastinate on keeping up with weekly reading assignments and nearly 2.5 times more likely to report that procrastination was nearly always or always a problem when studying for examinations than were a comparison group of undergraduate students in Solomon and Rothblum's (1984) study.

Although the effects of academic procrastination among graduate students can influence performance in all academic areas, it is likely that the academic procrastination is particularly detrimental when they are engaged in proposing and/or conducting research, as is typically the case in research methodology courses. Indeed, Onwuegbuzie (1997) found that many graduate students procrastinate at various stages of the research process, including while being engaged in the literature review process. Since many students also experience library anxiety while conducting research (Onwuegbuzie, 1997), although not yet tested empirically, it is likely that academic procrastination is related to library anxiety.

Mellon (1986) described library anxiety as a situation-specific, negative feeling or emotional disposition which occurs when a student is in a library setting. Researchers (Mellon, 1986, 1988; Kuhlthau, 1988, 1991; Onwuegbuzie, 1997) have reported that library anxiety demotivates students from beginning or prolonging their search, thereby impeding the development of their library skills. According to Kuhlthau (1988, 1991), students with high levels of library anxiety tend to engage in negative ruminations, which lead to cognitive interference during various stages of the information search process. Kuhlthau (1988, 1991) identified six stages during which anxiety levels may be elevated, namely, task initiation, topic selection, prefocus exploration, focus formulation, information collection, and search closure.

The purpose of this study was to investigate the relationship between academic procrastination and library anxiety. According to Rothblum et al. (1986), academic procrastination includes the self-reported tendency to nearly always or always experience problematic levels of anxiety associated with this procrastination. Moreover, academic procrastination has been found to be related positively to generalized and specific kinds of anxiety such as test anxiety, social anxiety, and statistics anxiety (Onwuegbuzie, 1999; Rothblum et al., 1986; Solomon & Rothblum, 1984). Thus, it was hypothesized that academic procrastination would be positively related to library anxiety.

Method

Subjects

Subjects were 135 graduate students enrolled in several sections of a graduate-level research methodology course at a small mid-southern university. Participation in the study was voluntary and anonymous, with no subject

declining. In order to participate, students were required to give their consent by signing informed consent documents. The ages of the participants ranged from 21 to 51 (*mean* = 26.0, *SD* = 6.8). Mean academic achievement, as measured by grade point average, was 3.57 (*SD* = 0.36). The overwhelming majority of subjects was female (92.6%) and Caucasian-American (93.3%). However, a (non-parametric) Wilcoxon two-sample *t*-test (Hollander & Wolfe, 1973) revealed no gender difference ($p < .05$) with respect to levels of overall academic procrastination, fear of failure, and task aversiveness. Indeed, this finding is consistent with other studies in which procrastination scores by males and females were not significantly different (e.g., Effert & Ferrari, 1989; Ferrari, 1989, 1991b, 1991c). Additionally, a series of Wilcoxon two-sample *t*-tests revealed no gender difference ($p < .05$) with respect to the five dimensions of library anxiety. Thus, all data were collapsed across gender.

Instruments and Procedure

Participants were administered the Library Anxiety Scale (LAS) and the Procrastination Assessment Scale-Students (PASS). The LAS, developed by Bostick (1992), is a 43-item, 5-point Likert-format instrument which assesses levels of library anxiety. The instrument has five subscales, namely, *barriers with staff*, *affective barriers*, *comfort with the library*, *knowledge of the library*, and *mechanical barriers*. *Barriers with staff* refers to the perception of students that librarians and other library staff are intimidating, unapproachable, and too busy to provide assistance in using the library. *Affective barriers* stem from students' feelings of inadequacy about using the library. *Comfort with the library* deals with how safe, welcoming, and non-threatening students perceive the library to be. *Knowledge of the library* refers to how familiar with the library

students feel they are. Finally, *mechanical barriers* refer to feelings which emerge as a result of students' reliance on mechanical library equipment, including computer printers, copy machines, and change machines. A high score on any subscale represents high anxiety in this area. Jiao and Onwuegbuzie (1997) found that the LAS subscales generated scores which yielded coefficient alpha reliabilities ranging from .60 (*mechanical barriers*). to .90 (*barriers with staff*). For the present study, scores from the subscales yielded alpha reliability coefficients which ranged from .65 (*knowledge of the library*) to .94 (*barriers with staff*).

The PASS, which was developed by Solomon and Rothblum (1984), contains two parts. The first part lists six academic tasks involving writing a term paper, studying for examinations, and keeping up with weekly reading assignments, attendance tasks, and school activities. Respondents are asked to complete three rating scales for each of the six tasks indicating the frequency with which they procrastinate on that task (1 = Never procrastinate; 5 = Always procrastinate), whether their procrastination on the task is a problem (1 = Not at all a problem; 5 = Always a problem), and whether they want to decrease their procrastination on the task (1=Do not want to decrease; 5 = Definitely want to decrease). As recommended by its authors (Solomon & Rothblum, 1984), the PASS items pertaining to (1) the frequency with which respondents procrastinate on a task and (2) whether their procrastination on that task is a problem were summed to provide an overall measure of academic procrastination, with total scores ranging from 12 to 60. Higher scores are indicative of self-reported academic procrastination.

The second section of the PASS asks students to think of the last time they

procrastinated on writing a term paper. Then they indicated how much each of the 26 reasons reflected why they procrastinated (1 = Not at all reflects why I procrastinated; 5 = Definitely reflects why I procrastinated). A factor analysis undertaken by the authors on the reasons why college students procrastinate indicated two factors, namely, fear of failure and task aversiveness.

The PASS has been shown to possess adequate construct validity, as evidenced by significant relationships between scores on the scale and behavioral measures of procrastination such as delay in taking self-paced quizzes (Solomon & Rothblum, 1984) and delay in handing in a term paper (Beswick, Rothblum, & Mann, 1988), delay in submitting course requirements (Rothblum, Beswick, & Mann, 1984), and delay in participating in psychology experiments (Solomon & Rothblum, 1984). Furthermore, Ferrari (1989) reported adequate internal consistency estimates for each part of the PASS and both factors ranging from .60 to .80, and acceptable test-retest reliabilities at one month ranging from .63 to .74. For the present study, the coefficient alpha reliability estimates of the PASS measures was .84 for the procrastination scale, .85 for the fear of failure factor, and .76 for the task aversiveness factor.

Data Analysis

The major analysis utilized in this study involved a canonical correlation analysis, which is a multivariate technique. A canonical correlation analysis was conducted to identify a combination of *reason for procrastination* dimensions (i.e., fear of failure and task aversiveness) which might be correlated with a combination of library anxiety dimensions. Canonical correlation analysis is utilized to examine the relationship between two sets of variables when each set contains more than one variable (Cliff & Krus, 1976; Darlington, Weinberg, &

Walberg, 1973; Thompson, 1980, 1984). Indeed, as noted by Knapp (1978, p. 410), "virtually all of the commonly encountered tests of significance can be treated as special cases of canonical correlation analysis." That is, canonical correlation analysis can be used to undertake all the parametric tests which canonical correlation methods subsume as special cases, including t-tests, multiple regression, analysis of variance, and analysis of covariance (Thompson, 1988).

In the present study, the five dimensions of library anxiety were treated as the dependent multivariate set of variables, whereas the two components of reasons for procrastination were utilized as the independent multivariate profile. The number of canonical functions (i.e., factors) which can be generated for a given dataset is equal to the number of variables in the smaller of the two variable sets. Since the reason for procrastination section of the PASS has two dimensions and five dimensions of the LAS were used, two canonical functions were generated.

For each canonical coefficient, standardized canonical function coefficients and structure coefficients are computed. Standardized canonical function coefficients are computed weights that are applied to each variable in a given set in order to obtain the composite variate used in the canonical correlation analysis. As such, standardized canonical function coefficients are analogous to factor pattern coefficients in factor analysis or to beta coefficients in a regression analysis (Arnold, 1996). Structure coefficients are the correlations between a given variable and the scores on the canonical composite (i.e., latent variable) in the set to which the variable belongs (Thompson, 1980). Thus, structure coefficients indicate the extent to which each

variable is related to the canonical composite for the variable set. Indeed, structure coefficients are essentially bivariate correlation coefficients which range in value between -1.0 and +1.0 inclusive (Thompson, 1980). The square of the structure coefficient is the proportion of variance that the original variable shares linearly with the canonical variate.

Results

Table 1 presents the Pearson product-moment correlations (i.e., zero-order correlations) between overall academic procrastination and the five dimensions of library anxiety. Using the Bonferroni adjustment to control for Type I error, it can be seen that overall academic procrastination was related positively to affective barriers, comfort with the library, and mechanical barriers.

Table 1 also presents the correlations between the two reasons for procrastination subscales (i.e., fear of failure and task aversiveness) and the five dimensions of library anxiety. Again, using the Bonferroni adjustment, it can be seen that (1) fear of failure was related positively to affective barriers and comfort with the library; and (2) task aversiveness was related positively to knowledge of the library.

Insert Table 1 about here

The strength of the relationship between the two sets of variables was assessed by examining the magnitude of the canonical correlation coefficients. These coefficients indicate the degree of relationship between the weighted procrastination variables and the weighted library anxiety variables. In addition, the significance of the canonical roots was tested via the F-statistic

based on Rao's approximation (Rao, 1952).

The canonical analysis revealed that both canonical correlations combined were statistically significant (F [10, 256] = 3.45, $p < .05$). However, when the first canonical root was excluded, the remaining canonical root was not statistically significant, suggesting that the first canonical function was statistically significant, but the second canonical root was not statistically significant. However, since the calculated probabilities are sensitive to sample size, particular attention should be paid to the educational (practical) significance of the obtained results (Thompson, 1980). The educational significance of canonical correlations typically are assessed by examining their size (Thompson, 1980, 1984, 1988, 1990). The canonical correlation indicates how much variance the sets of weighted original variables share with each other (Thompson, 1988). In the present study, the first canonical correlation (R_{c1} = .42) appeared to be moderately educationally significant, contributing 17.6% (i.e., R_{c1}^2) to the shared variance. However, the second canonical correlation (R_{c2}^2 = .06) did not appear to be educationally significant. Consequently, only the first canonical correlation was interpreted.

Data pertaining to the first canonical root are presented in Table 2. This table provides both standardized function coefficients and structure coefficients. An examination of the standardized canonical function coefficients revealed that, using a cutoff correlation of 0.3 recommended by Lambert and Durand (1975) as an acceptable minimum loading value, two of the six library anxiety dimensions (i.e., barriers with staff and affective barriers) made an important contribution to the anxiety composite--with affective barriers being the major contributor.

With respect to the reasons of procrastination set, both dimensions (i.e., fear of failure and task aversiveness) made an important contribution to the composite set. However, although the absolute magnitude of the standardized function coefficients may be relatively reliable in ascertaining the contribution of a variable to the composite, the numerical values of these coefficients are highly affected by the collinearity of the variables in a given set (Thompson, 1990). Due to the moderate to large statistically significant intercorrelations among the two reasons for procrastination factors (r = .36), and the library anxiety dimensions (the intercorrelations ranged from .26 to .79), the structure coefficients represented the primary statistics that were interpreted.

The structure coefficients (Table 2) revealed that four of the five dimensions of library anxiety made important contributions to the first canonical variate. The square of the structure coefficient (Table 2) indicated that affective barriers made an extremely large contribution, explaining 88.0% of the variance. Barriers with staff, comfort with the library, and knowledge of the library made moderate contributions, explaining 16.9%, 28.4%, and 25.3% of the variance, respectively. With regard to the reasons for procrastination cluster, both dimensions made noteworthy contributions, with fear of failure making the largest contribution--explaining 87.0% of the variance.

Insert Table 2 about here

Discussion

The purpose of this study was to investigate empirically the relationship between academic procrastination and five dimensions of library anxiety. Findings

revealed that overall academic procrastination is significantly positively related to affective barriers, comfort with the library, and mechanical barriers. In addition, procrastination resulting from both fear of failure and task aversiveness appears to be related significantly to barriers with staff, affective barriers, comfort with the library, and knowledge of the library. These findings are consistent Onwuegbuzie (1997), who noted that many graduate students procrastinate while they are engaged in the process of writing a research proposal. These results also are in accordance with the bulk of the literature which has documented a relationship between procrastination and generalized and specific kinds of anxiety such as test anxiety, statistics anxiety, social anxiety, and self-consciousness (Ferrari, 1991a; Milgram, 1991; Onwuegbuzie, 1999; Rothblum et al., 1986; Solomon & Rothblum, 1984).

The relationship between academic procrastination and library anxiety provides further evidence that procrastination is more than deficits in time management and study skills, but includes cognitive-affective components (Rothblum et al., 1986; Solomon & Rothblum, 1984). In fact, according to Rothblum et al. (1986), high procrastinators do not differ in their study behavior as much as they differ on anxiety.

Although there is strong evidence that there is a relationship between academic procrastination and library anxiety, it is not clear whether it represents a causal relationship. Assuming this is the case, it is not within the scope of the present investigation to determine the causal direction. That is, it is not clear whether academic procrastination is a cause of library anxiety or whether library anxiety promotes academic procrastination. It is most likely perhaps that a bidirectional relationship exists between academic

procrastination and library anxiety, with each affecting the other, which, if true, would indicate that academic procrastination and library anxiety are intricately intertwined. For example, it is possible that, while engaged in the research process, high-procrastinating graduate students experience extreme elevations in library anxiety. Individuals who experience increases in levels of library anxiety are more likely to postpone utilizing the library and undertaking library tasks (e.g., conducting library searches). In any case, this cycle of procrastination and library anxiety is likely to continue until levels of both are maximized. Whereas for some students, the procrastination component of the cycle is likely to stem from a fear of failure, for others, task aversiveness is the driving force.

As noted by researchers (Ferrari, 1992; Onwuegbuzie, 1997; Saddler & Sacks, 1993; Solomon & Rothblum, 1984), some procrastinators engage in perfectionism either in order to produce a flawless product (i.e., self-perfectionism) or to impress others by one's efforts (i.e., socially prescribed perfectionism). Additionally, a relationship between perfectionism and library anxiety has been reported (Jiao & Onwuegbuzie, 1998). These findings, together with the findings from the current study, suggests that (1) the relationship between academic procrastination and library anxiety is moderated by levels of perfectionism, or (2) the relationship between perfectionism and library anxiety is moderated by levels of academic procrastination. In any case, future research should investigate the interplay between procrastination, perfectionism, and library anxiety among graduate students.

The fact that subjects in both groups were predominantly female is an important limitation of the study. The fact that no gender differences were

found in the present study with respect to overall academic procrastination, fear of failure, task aversiveness, and all five dimensions of library anxiety, as well as the fact that the overwhelming majority of previous research has documented that males and females report similar levels of academic procrastination (e.g., Effert & Ferrari, 1989; Ferrari, 1989, 1991b, 1991c), suggest that the findings of the present study may be similarly generalizable to both male and female graduate students. However, male students have been found to report higher levels of library anxiety than do females (Jiao, Onwuegbuzie, & Lichtenstein 1996). Thus, it is not clear how generalizable the findings of the present study are across gender. If, indeed, males do experience higher levels of library anxiety than do females, it is possible that the relationship between academic procrastination and library anxiety found in this study would have been even stronger if more males had been included in the sample. As such, the present study needs to be replicated using a larger sample of males.

The fact that academic procrastination was assessed via a self-report instrument, rather than on actual behavior, is perhaps another limitation of the study, since it is possible that students may give socially desirable responses. However, according to Rothblum et al. (1986), "self-reported procrastination has been validated against delay in taking self-paced quizzes (Solomon & Rothblum, 1984), delay in submitting course assignments (Rothblum et al., 1984), delay in participation in psychology experiments (Solomon & Rothblum, 1984), and lower course grades (Rothblum et al., 1984)" (p. 388). Notwithstanding, future studies in this area should consider using behavioral measures of academic procrastination in addition to self-report instruments. In particular, qualitative studies are needed which investigate the role of academic

procrastination through each of Kuhlthau's (1988, 1991) six stages of the information search process, since it is likely that students procrastinate at one or more of these stages. Moreover, future research should determine the stage at which procrastination is the most prevalent and debilitative.

To the extent that the findings from the present study are replicable, several practical implications can be derived. Perhaps most importantly, these results suggest that, whereas some graduate students may benefit from traditional interventions for procrastination such as time management and study skills counseling (Green, 1982; Richards, 1975; Ziestat, Rosenthal, & White, 1978), self-discipline and self-criticism (Mulry, Fleming, & Gottschalk, 1994), compliance-based and defiance-based paraxodical strategies (Dowd et al., 1988; Dowd & Swoboda, 1984; Rohrbaugh, Tennen, Press, & White, 1981), and the use of external contingencies (Green, 1982), as noted by Rothblum et al. (1986), others may benefit more from interventions which focus on anxiety management and reduction. Such students also could be given information about how to direct attention away from self-centered worries when they are engaged in the library search process. By using such interventions, it is hoped that more graduate students will be positive about utilizing the library in general, and about the information search process in particular.

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Table 1

Pearson Product-Moment Correlations of Procrastination Measures and the Library Anxiety Dimensions

Library Anxiety Factor	Procrastination Measures		
	Procrastination Scale	Fear of Failure	Task Aversiveness
Barriers with Staff	.19	.20	.03
Affective Barriers	.24'	.39'	.22
Comfort with the Library	.25'	.23'	.10
Knowledge of the Library	.09	.16	.22'
Mechanical Barriers	.24'	.09	.04

' statistical significance after Bonferroni adjustment

Table 2

Canonical Solution for First Function

Variable	Standardized Coefficient	Structure Coefficient	Structure² (%)
Library Anxiety Dimension:			
Barriers with Staff	-0.305'	.411'	16.9
Affective Barriers	1.122*	.938'	88.0
Comfort with the Library	-0.044	.533'	28.4
Knowledge of the Library	0.261	.503'	25.3
Mechanical Barriers	-0.165	.215	4.6
Reason for Procrastination Dimension:			
Fear of Failure	0.792'	.933'	87.0
Task Aversiveness	0.387'	.675'	45.6

' loadings with large effect sizes